Chapter 16
Aviation Operations and Resources

Purpose and Scope

Aviation resources are one of a number of tools available to accomplish fire related land management objectives.

Aviation use must be prioritized based on management objectives and probability of success.

The effect of aviation resources on a fire is directly proportional to the speed at which the resource(s) can initially engage the fire, the effective capacity of the aircraft, and the deployment of ground resources.

These factors are magnified by flexibility in prioritization, mobility, positioning, and utilization of the versatility of many types of aircraft.

Risk management is a necessary requirement for the use of any aviation resource. The risk management process must include risk to ground resources, and the risk of not performing the mission, as well as the risk to the aircrew.

Organizational Responsibilities

National Office – Department of Interior (DOI)

Office of Aviation Services (OAS)
The Office of Aviation Services (OAS) is responsible for the coordination of aviation policy development and maintenance management within the agencies of the Department of the Interior (DOI). The OAS has no operational responsibility. The OAS provides aviation safety program oversight, accident investigation, and inspection/approval of aircraft and pilots for DOI agencies.

Bureau of Land Management (BLM)
National Aviation Office (NAO) – NAO develops BLM policy, procedures, and standards. It also maintains functional oversight, and facilitates interagency coordination for all aviation activities. The principal goals are safety and cost-effectiveness. The NAO supports BLM aviation activities and missions. This includes fire suppression, through strategic program guidance, managing aviation programs of national scope, coordination with OAS, and interagency partners. The Fire and Aviation Directorate has the responsibility and authority, after consultation with State Fire Management Officers, for funding and acquisition of all fire aircraft, prioritizing the allocation of BLM aircraft on a Bureau wide basis, and approving State Office requests to acquire supplemental aircraft resources. Refer to *BLM National Aviation Plan and Manual 9400* for aviation policy and guides. Refer to 112 DM 12 for a list of responsibilities.

National Park Service

The Branch of Aviation develops NPS policy, procedures, and standards for all fire and non-fire aviation activities. This includes providing guidance on fire suppression, as well as standardizing aviation programs at the national level, coordinating with OAS and interagency partners. The Branch of Aviation also has responsibility for operational execution of the aviation program. The Branch ensures personnel receive aviation training, provides internal training for fleet pilots, has responsibility for quality assurance and quality control of park aviation programs and provides fiscal analysis to determine numbers and types of aircraft for the bureau.

National Office – U.S. Department of Agriculture

Forest Service (FS)

The FS has responsibility for all aspects of its aviation program, including aviation policy and budget development, aircraft acquisition, pilot standardization, and maintenance management. In addition, the FS has operational responsibility for functional oversight of aviation assets and facilities, accident investigation, and aircraft and pilot inspection.

The Assistant Director (AD), Aviation, is responsible to the Director of Fire and Aviation Management for the management and supervision of the National Headquarters Office in Washington DC, and the detached Aviation Unit in Boise. The AD, Aviation provides leadership, support and coordination for national and regional aviation programs and operations. Refer to FSM 5704.22 for list of responsibilities.

The Branch Chief, Aviation Operations reports to the AD, Aviation, and is responsible for national aviation operational management and oversight.

The Branch Chief, Pilot Standardization reports to the AD, Aviation, and is responsible for pilot and aircrew standardization and approval of agency and contract pilots and aircrew.

The Branch Chief, Airworthiness reports to the AD, Aviation, and is responsible for national aircraft airworthiness and maintenance program management and oversight.

The Branch Chief, Aviation Business Operations reports to the AD, Aviation and is responsible for policy maintenance and development, budget development, and planning.

The Aviation Strategic Planner reports to the AD, Aviation and is responsible for strategic planning and reporting.

The Branch Chief, Aviation Safety Management Systems reports to the AD, Risk Management and Training, and is responsible for the national aviation safety and risk management program and oversight.

State/Regional Office

- ***BLM*** *– State FMOs are responsible for providing oversight for aircraft hosted in their state. State FMOs have the authority and responsibility to approve, with National Office concurrence, acquisition of supplemental aircraft resources within their state. State FMOs have the authority to prioritize the allocation, pre-positioning and movement of all aircraft assigned to the BLM within their state. State Offices will coordinate with the National Office on movement of their aircraft outside of their State. A State Aviation Manager (SAM) is located in each state office. SAMs are delegated as the Contracting Officers Representative (COR) for all exclusive use aircraft hosted by their state. SAMs implement aviation program objectives and directives to support the agency mission and state objectives. A state aviation plan is required to outline the state aviation program objectives and to identify state-specific policy and procedures.*
- ***NPS*** *– A Regional Aviation Manager (RAM) is designated for each Region. RAMs oversee the tactical execution of their region's aviation programs, provide technical expertise and aviation safety oversight of the parks in their geographic area. RAMs observe regional aviation activities and provide liaison with the national Branch of Aviation and other agencies as appropriate. A Regional aviation operations and management plan is required to outline the Region's aviation program objectives and to identify Region-specific policy and procedures.*
- ***FWS*** *– A Regional Aviation Manager (RAM) is designated for each Region. RAMs implement aviation program objectives and directives to support the agency mission and Region objectives. Several Regions have additional support staff, and/or pilots assigned to support aircraft operations and to provide technical expertise. A Regional aviation operations and management plan is required to outline the Region's aviation program objectives and to identify Region-specific policy and procedures.*
- ***FS*** *– Regional Aviation Officers (RAOs) are responsible for directing and managing Regional aviation programs in accordance with the National and Regional Aviation Management Plans, and applicable agency policy direction. (Refer to FSM 5700 and FSH 5709.16 for list of responsibilities). RAOs report to Director of Fire and Aviation for their specific Region. Regional Aviation Safety Managers (RASMs) are responsible for aviation safety in their respective Regions, and work closely with the RAO to ensure aviation safety is an organizational priority (refer to FSM 5700 and FSH 5709.16 for list of responsibilities). Most Regions have additional aviation technical specialists and pilots who help manage and oversee the Regional aviation programs. Most Regions also have Aviation Maintenance*

Inspectors, Fixed-wing Program Managers, Helicopter Program Managers, Helicopter Operations Specialists, Inspector Pilots, etc.

Local Office

Some areas have interagency aviation programs that utilize an Aviation Manager for multiple units. Duties are similar as other local level managers.

- ***BLM*** *– Unit Aviation Managers (UAMs) serve as the focal point for the Unit Aviation Program by providing technical expertise and management of aviation resources to support Field Office/District programs. Field/District Offices are responsible for hosting, supporting, providing daily management, and dispatching all aircraft assigned to their unit. Field/District Offices have the authority to request additional resources; to establish priorities, and make assignments for all aircraft assigned to the BLM within their unit or zone.*
- ***NPS*** *– Unit or Park Aviation Managers have the responsibility to provide aviation expertise and management of aviation resources at each park unit. Organizational responsibility refer to DO-60, RM-60.*
- ***FS*** *– Unit Aviation Officers (UAOs)/Forest Aviation Officers (FAOs) have the responsibility for aviation activities at the local level, including aviation mission planning, risk management and safety, supervision, and evaluation. UAOs/FAOs assist Line Officers with risk assessment/management and cost analysis. Refer to FSM 5700 Zero Code for a list of responsibilities.*

Aviation Information Resources

Aviation reference guides and aids for agency aviation management are listed for policy, guidance, and specific procedural requirements.

- ***BLM*** *– 9400 Manual Appendix 1, National Aviation Plan (NAP) and applicable aviation guides as referenced in the NAP.*
- ***NPS*** *– RM-60 Aviation Management Reference Manual, IHOG, and IASG.*
- ***FWS*** *– Service Manual 330-339, Aviation Management and IHOG.*
- ***FS*** *– FSM 5700, FSH 5709.16 and applicable aviation guides when approved by the agency and referenced in policy.*

Safety alerts, operational alerts, instruction memoranda, information bulletins, incident reports, and other guidance or information are issued as needed.

An up-to-date library with aviation policy and procedural references will be maintained at all permanent aviation bases, dispatch, and aviation management offices.

Aviation Safety

The FS and the BLM have adopted Safety Management Systems (SMS) as the foundation for the aviation safety program. The four pillars of SMS are Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. SMS

is the standard for aviation safety set by the International Civil Aviation Organization (ICAO) and the Federal Aviation Administration (FAA).

SMS focuses on:

- Emphasis on proactive risk management;
- Promotes a "Just" culture;
- Addresses systemic safety concerns;
- Holds the organization accountable;
- Identifies "What" so we can manage the manageable; and
- Communicates the "Why" so the culture can learn from mistakes.

The intent of SMS is to improve the aviation culture by increasing hazard identification, reduce risk-taking behavior, learn from mistakes, and correct procedures before a mishap occurs rather than after the accident. More information on SMS is available at the Wildland Fire Lessons Learned Center under the Lessons Learned link at www.wildfirelessons.net. Additionally, the current approved US Forest Service Aviation SMS Guide is available at www.fs.fed.us/fire/av_safety/.

Risk Assessment and Risk Management

The use of risk management will help to ensure a safe and successful operation. Risk is the probability that an event will occur. Assessing risk identifies the hazard, the associated risk, and places the hazard in relationship to the mission. A decision to conduct a mission requires weighing the risk against the benefit of the mission and deciding whether the risks are acceptable.

Aviation missions always have some degree of risk. The four sources of hazards are methods, medium, man, and machine. Managing risk is a 5-step process:

1. Identify hazards associated with all specified and implied tasks for the mission.
2. Assess hazards to determine potential of occurrence and severity of consequences.
3. Develop controls to mitigate or remove risk, and make decisions based on accepting the least risk for the best benefit.
4. Implement controls – (1) education controls, (2) physical controls, and (3) avoidance controls.
5. Supervise and Evaluate – enforce standards and continuously re-evaluate their effectiveness in reducing or removing risk. Ensure that controls are communicated, implemented, and enforced.

- ***FS*** *– FSM 5700. Employees shall use an operational risk management process to evaluate the risk and hazards prior to every flight.*

How to Properly Refuse Risk (Aviation)

Every individual (government and contracted employees) has the right and obligation to report safety problems affecting his or her safety and has the right to contribute ideas to correct the hazard. In return, supervisors are expected to give these concerns and ideas serious consideration. When an individual feels an assignment is unsafe, he or she also has the obligation to identify, to the degree possible, safe alternatives for completing that assignment. Turning down an assignment is one possible outcome of managing risk.

A "turn down" is a situation where an individual has determined he or she cannot undertake an assignment as given and is unable to negotiate an alternative solution. The turn down of an assignment must be based on assessment of risks and the ability of the individual or organization to control or mitigate those risks. Individuals may turn down an assignment because of safety reasons when:

- There is a violation of regulated safe aviation practices;
- Environmental conditions make the work unsafe; or
- They lack the necessary qualifications or experience.

Individuals will directly inform their supervisor that they are turning down the assignment as given. The most appropriate means of documented turn down criteria is using the Aviation Watch Out Situations (*IRPG*).

Supervisors will notify the Air Operations Branch Director (AOBD) or unit aviation leadership immediately upon being informed of a turn down. If there is no AOBD, notification shall go to the appropriate Section Chief, the Incident Commander or local fire and aviation staff. Proper handling of turn downs provides accountability for decisions and initiates communication of safety concerns within the incident organization.

If the assignment has been turned down previously and the supervisor asks another resource to perform the assignment, he or she is responsible to inform the new resource that the assignment had been turned down and the reasons why. Furthermore, personnel need to realize that a "turn down" does not stop the completion of the assigned operation. The "turn down" protocol is an integral element that improves the effective management of risk, for it provides timely identification of hazards within the chain of command, raises risk awareness for both leaders and subordinates, and promotes accountability.

If an unresolved safety hazard exists the individual needs to communicate the issue/event/concern immediately to his or her supervisor and document as appropriate.

Aviation Safety Support

Aviation Safety Assistance Team (ASAT)

During high levels of aviation activity, it is advisable to request an Aviation Safety Assistance Team (ASAT). An ASAT's purpose is to enhance risk management, efficiency, effectiveness, and provide technical assistance while reviewing aviation operations. If an ASAT cannot be filled internally, the request may be placed with NICC through established ordering channels using individual overhead requests. An ASAT should operate under a Delegation of Authority from the appropriate State/Regional Aviation Manager(s) or Multi Agency Coordinating Group. Formal written reports shall be provided to appropriate manager(s) as outlined at the in-brief. A team should be developed to fit the need of the requesting unit and may consist of the following:

- Aviation Safety Manager;
- Operations Specialist (helicopter and/or fixed wing);
- Pilot Inspector;
- Maintenance Inspector (optional);
- Avionics Inspector (optional); and
- Aircraft Dispatcher (optional).

Aviation Safety Briefing

Every passenger must receive a briefing prior to each flight. The briefing is the responsibility of the Pilot in Command (PIC) but may be conducted by the pilot, flight manager, helicopter manager, fixed-wing base manager, or an individual with the required training to conduct an aviation safety briefing. The pilot should also receive a mission briefing from the government aircraft manager. Refer to the *IRPG* and *IHOG* Chapter 10.

Aviation Hazard

An aviation hazard is any condition, act, or circumstance that compromises the safety of personnel engaged in aviation operations. Pilots, flight crew personnel, aviation managers, incident air operations personnel, and passengers are responsible for hazard identification and mitigation. Aviation hazards may include but are not limited to the following:

- Deviations from policy, procedures, regulations, and instructions;
- Improper hazardous materials handling and/or transport;
- Airspace conflicts/flight following deviation;
- Deviation from planned operations;
- Failure to utilize PPE or Aviation Life Support Equipment (ALSE);
- Failure to meet qualification standards or training requirement;
- Extreme environmental conditions;
- Improper ground operations;
- Improper pilot procedures;
- Fuel contamination; and
- Unsafe actions by pilot, air crew, passengers, or support personnel.

Aviation hazards also exist in the form of wires, low-flying aircraft, and obstacles protruding beyond normal surface features. Each office will post, maintain, and annually update a "Known Aerial Hazard Map" for the local geographic area where aircraft are operated, regardless of agency jurisdiction. This map will be posted and used to brief flight crews. Unit Aviation Managers are responsible for ensuring the development and updating of Known Aerial Hazard Maps (IHOG).

Aerial Applications of Wildland Fire Chemical Safety
Chapter 12 contains information concerning the aerial application of wildland fire chemicals.

SAFECOM

The DOI and the FS have an incident/hazard reporting form called The Aviation Safety Communiqué (SAFECOM). The database, available at https://www.safecom.gov/, fulfills the Aviation Mishap Information System (AMIS) requirements for aviation mishap reporting for the DOI agencies and the FS. Categories of reports include: Accidents, Airspace, Hazards, Incidents, Maintenance, Mishap Prevention, and Kudos. The system uses the SAFECOM Form OAS-34 or FS-5700-14 to report any condition, observation, act, maintenance problem, or circumstance with personnel or aircraft that has the potential to cause an aviation-related mishap. The SAFECOM system is not intended for initiating punitive actions. Submitting a SAFECOM is not a substitute for "on-the-spot" correction(s) to a safety concern. It is a tool used to identify, document, track, and correct safety related issues. A SAFECOM does not replace the requirement for initiating an accident or incident report.

Any individual (including vendors/cooperators) with knowledge of an incident/hazard should complete a SAFECOM. The SAFECOM form, including attachments and pictures, should be entered directly on the internet at https://www.safecom.gov/ or faxed to the Department of the Interior's Office of Aviation Services, Aviation Safety (208) 433-5069 or to the FS at (208) 387-5735 ATTN: SAFETY. Electronic cc copies are automatically forwarded to the National, Regional, State, and Unit Aviation Managers.

The agency with operational control of the aircraft at the time of the hazard/incident/accident is responsible for completing the SAFECOM and submitting it through agency channels.

Aircraft Incidents/Accidents

Notification to the FS or OAS and DOI agency Aviation Safety Managers is required for any aircraft mishap involving damage or injury. Use the hotline (888) 464-7427 or the most expeditious means possible. Initiate the appropriate unit Aviation Mishap Response Plan.

Low-level Flight Operations

The only fixed-wing aircraft missions authorized for low-level fire operations are:

- Smokejumper/Para-cargo;
- Aerial Supervision Module (ASM) and Lead operations; and
- Retardant, water, and foam application.

Operational Procedures

- A high-level recon will be made prior to low-level flight operations.
- All flights below 500 feet will be contained to the area of operation.
- PPE is required for all fixed-wing, low-level flights. Helmets are not required for multi-engine airtanker crews, smokejumper pilots, and ASM flight/aircrew members.

Congested Area Flight Operations

Airtankers can drop retardant in congested areas under DOI authority given in *14 CFR Part 137*.

FS authority is granted under exemption 392, from *14 CFR Part 91.119* as referenced in *FSM 5714*. When such operations are necessary, they may be authorized subject to these limitations:

- Airtanker operations in congested areas may be conducted at the request of the city, rural fire department, county, state, or federal fire suppression agency;
- An ASM/Lead/ATCO is ordered to coordinate aerial operations;
- The air traffic control facility responsible for the airspace is notified prior to or as soon as possible after the beginning of the operation;
- A positive communication link must be established between the ASM or Lead/ATCO, airtanker pilot(s), and the responsible fire suppression agency official; and
- The IC for the responsible fire agency or designee will advise the ASM/leadplane/airtanker that all non-essential people and movable property have been cleared prior to commencing retardant drops.

Unmanned Aircraft Systems

Unmanned Aircraft Systems (UAS) or drone operation by individuals and organizations must be authorized by the FAA or comply with the *Special Rule for Model Aircraft* (Section 336 of P.L. 112-95). Information is available online at www.faa.gov/uas. Individuals who are determined to have interfered with wildland fire operations may be subject to civil penalties and potentially criminal prosecution.

When UAS are flown for USFS/DOI work or benefit, Federal Aviation Administration (FAA), USFS, and DOI regulations apply.

Units wishing to utilize UAS must have a plan in place for how they are going to collect, process, and disseminate data gathered by a UAS.

Consult with your Unit Aviation Officer or the Regional/State aviation staff to assist in selecting and ordering the aircraft best suited for the mission.

The following minimum standards apply:

- All aircraft (to include UAS) purchase, lease, or acquisition **must** follow agency procurement policy and procedures.
- All aircraft and pilots employed by the USFS or DOI agencies **shall** be approved. Federal use of cooperator agency UAS may be authorized by a Cooperator Aircraft Letter of Approval, valid under the parameters of the FAA's Certificate of Waiver or Authorization (COA).
- UAS flights under USFS operational control **must** adhere to USFS policy and regulations regarding their use. Guidance can be found in FSM 5713.7, the USFS National Aviation Safety and Management Plan and at http://www.fs.fed.us/science-technology/fire/unmanned-aircraft-systems.
- UAS flights under DOI operational control **must** adhere to DOI policy and regulations regarding their use. Guidance can be found in 350-353 Departmental Manuals and Operational Memoranda https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/OPM-11.pdf.
- All government agency use or takeoff and landing on federal land of UAS **requires** prior notifications and approval. Some agencies have issued internal direction regarding UAS use. Agency aviation managers must be consulted prior to commencing UAS operations to ensure compliance with individual agency policy that may be more stringent than FAA requirements. A Project Aviation Safety Plan (PASP) is required for all missions or projects, to include UAS missions on fires.
- All government and commercial applications **require** an FAA "Certificate of Waiver or Authorization" (COA) which specifies the time, location, and operating parameters for flying the UAS. A COA also requires the requesting agency to certify the airworthiness of the proposed aircraft and definition of the standards used to make that determination. For federal fires, the DOI or USFS would be the lead agency for obtaining a COA depending on the jurisdiction of the fire. In the event of a multi-jurisdiction incident the DOI UAS specialist, the USFS UAS advisory group chair, or State or local representative will determine who should obtain the COA.

- Incident Management Teams **must** notify the agency administrator prior to use of UAS. A modification to the Delegation of Authority should be considered.
- Personally owned UAS or model aircraft **may not** be used by federal agencies or their employees for interagency fire use.

Key Points

- An emergency COA can only be issued by the FAA if the proponent already has an existing COA for their aircraft. The request must be accompanied with a justification that no other aircraft exist for the mission and that there is eminent potential for loss of life, property, or critical infrastructure, or is critical for the safety of personnel.
- Cooperators, pilot associations and volunteer aviation groups or individuals may offer to fly unmanned aviation missions (e.g., aerial surveys, fire reconnaissance, infrared missions) at no charge to the IMTs. Although these offers seem very attractive, we cannot accept these services unless they meet FAA, USFS and/or DOI policy.
- The use of any UAS (including model or remote controlled aircraft) with or without compensation is considered a "commercial" operation per the FAA. The FAA has established guidelines for hobbyists who fly model and remote controlled aircraft via Advisory Circular 91-57. Model aircraft are to be flown only for recreation or hobby purposes. For further information, refer to http://www.faa.gov/uas/.

Additional information can be found on the FAA website http://www.faa.gov/uas/.

Airspace Coordination

The Interagency Airspace Program is an aviation safety program designed to enhance aviation safety and reduce the risk of a mid-air collision. Guidance for this program is found in the Interagency Airspace Coordination Guide (IACG), which has been adopted as policy by the DOI and FS. Additional guidance may be found in the *National Interagency Mobilization Guide* and supplemented by local Mobilization Guides.

- ***FS*** *– Refer to FSM 5709.16 Chapter 30 and the Forest Service Administrative Use of Aircraft Desk Reference.*

Some BLM, state and FS units have Memorandums of Understanding (MOUs) with local military airspace authorities for airspace coordination. Briefings from Unit Aviation Managers/Officers (UAM/UAO) are crucial to ensure that any local airspace information is coordinated before flight.

All firefighting aircraft are required to have operative transponders and will use a national firefighting transponder code of 1255 when engaged in, or traveling

to, firefighting operations (excluding ferry flights), unless given a discrete code by Air Traffic Control (ATC).

Additional coordination information can be found by contacting:

- ***BLM*** *– State Aviation Managers, National Airspace Program Manager*
- ***NPS*** *– Regional Aviation Managers*
- ***FWS*** *– National Aviation Safety and Operations*
- ***FS*** *– Regional Aviation Officers, National Airspace Program Manager*

Flight Request and Approval

- ***NPS*** *– Reference RM 60, Appendix 3 and 4.*
- ***FS*** *– Refer to FSM 5709.16, Chapter 30 for all flights.*

Point-to-Point Flights

A "Point-to-point" flight is one that originates at one developed airport or permanent helibase and flies directly to another developed airport or permanent helibase with the sole purpose of transporting personnel or cargo (this term does not apply to flights with a scheduled air carrier on a seat fare basis). These types of flights are often referred to as "administrative" flights and only require the aircraft and pilot to be carded and approved for point-to-point flight. A point-to-point flight is conducted higher than 500 feet above ground level (AGL).

Agency policy requires designating a Flight Manager for point-to-point flights transporting personnel. The Flight Manager is a government employee that is responsible for coordinating, managing, and supervising flight operations. The Flight Manager is not required to be on board for most flights. For those flights that have multiple legs or are complex in nature a Flight Manager should attend the entire flight. The Flight Manager will meet the qualification standard for the level of mission assigned as set forth in the *Interagency Aviation Training Guide* (IAT).

- ***BLM*** *– Reference the BLM National Aviation Plan, Chapter 3, available at http://www.blm.gov/nifc/st/en/prog/fire/Aviation/avlibrary.html.*
- ***NPS*** *– Reference RM-60, Appendix 3 for agency specific policy.*
- ***FS*** *– Refer to FSM 5709.16 Chapter 30 and the Forest Service Administrative Use of Aircraft Desk Reference.*

Mission Flights

Mission flights are defined as flights not meeting the definition of point-to-point flight. A mission flight requires work to be performed in the air (retardant or water delivery, fire reconnaissance, smokejumper delivery), or through a combination of ground and aerial work (delivery of personnel and/or cargo from helibases to helispots or unimproved landing sites, rappelling or cargo let-down, horse herding).

- PPE is required for any fixed wing mission flight conducted below 500'AGL. Flight helmets are not required for multi-engine airtanker crews, smokejumper pilots and ASM flight/aircrew members.
- Required attire for ATGS and fire reconnaissance are:
  - Leather shoes or boots; and
  - Natural fiber shirt, full length cotton or nomex pants, or flight suit.
- The use of full PPE is required for all helicopter flights (point to point and mission) and associated ground operations. The specific items to be worn are dependent on the type of flight, the function an individual is performing, or the ground operation being conducted. Refer to the tables in Chapter 9 of the *IHOG* for specific requirements.
- All personnel will meet training and qualification standards required for the mission.
- Agency FM radio capability is required for all mission flights.
- All passengers must be authorized and all personnel onboard must be essential to the mission.
  - ***FS*** *– Special Use Mission Flight is any flight that is not point-to-point. Special use mission flights require special pilot endorsements, flight evaluations, training, and/or specialized aircraft equipment. For all special use mission flights, all pilots and aircraft must be specifically approved in writing for that flight.*

Mission flights for fixed-wing aircraft include but are not limited to the following:

- Water or retardant application;
- Parachute delivery of personnel or cargo;
- Airtanker coordinator operations;
- Takeoff or landing requiring special techniques due to hazardous terrain, obstacles, or surface conditions; and
- Night air tactical operations.

Mission helicopter flights include but are not limited to the following:

- Flights conducted within 500 feet AGL;
- Water or retardant application;
- Helicopter coordinator and ATGS operations;
- Aerial ignition activities;
- External load operations;
- Rappelling;
- Takeoff or landing requiring special techniques due to hazardous terrain, obstacles, pinnacles, or surface conditions;
- Free-fall cargo;
- Fire reconnaissance;
- Short-haul operations; and
- Night helicopter operations.

Flight-Following All Aircraft

Flight-Following is mandatory for all flights. Refer to the *National Interagency Mobilization Guide* for specific direction.

- Agency FM radio capability is required for all mission flights.
- For mission flights, there are two types of Agency Flight Following: Automated Flight Following (AFF) and radio check-in. AFF is the preferred method of agency flight following. If the aircraft and flight following office have AFF capability, it shall be utilized. Periodic radio transmissions are acceptable when utilizing AFF. Reference the AFF procedures section of the *National Interagency Mobilization Guide* for more information.
- All dispatch centers designated for fire support shall have the ability to monitor AFF as well as the capability to transmit and receive "National Flight Following" and "Air Guard."
- If AFF becomes inoperable the aircraft will normally remain available for service, utilizing radio/voice system for flight following. Each occurrence must be evaluated individually and decided by the COR/CO.
- Helicopters conducting Mission Flights shall check-in prior to and immediately after each takeoff/landing per IHOG 4.II.E.2.

Sterile Cockpit All Aircraft

Sterile cockpit rules apply within a 5-mile radius of the airport. The flight crew will not perform radio or cockpit communication during that time that is not directly related to safe flight of the aircraft from taxi to 5 miles out and from 5 miles out until clearing the active runway. This would consist of reading checklists, communication with Air Traffic Control (ATC), Flight Service Stations, Unicom, or other aircraft with the intent of ensuring separation or complying with ATC requirements. Communications by passengers or air crew members can be accomplished when the audio panels can be isolated and do not interfere with flight operations of the flight crew.

Exception: When conducting firefighting missions within 5 miles of an uncontrolled airport, maintain sterile cockpit until departing the traffic pattern and reaching final altitude. Monitor CTAF frequency if feasible while engaged in firefighting activities. Monitor CTAF as soon as practical upon leaving the fire and returning to the uncontrolled airport. When conducting firefighting missions within Class B, C, or D airspace, notify dispatch that ATC communications will have priority over dispatch communications.

Interagency Interim Flight and Duty Limitations/Aviation Stand Downs

Aviation stand downs are a means to find time, in an otherwise demanding flight schedule, to reflect on core aviation safety values. In this context, aviation stand downs refer to an administrative decision to keep tactical aviation resources on the ground through all or part of their normal duty day or days.

Interim flight and duty limitations are a method to manage pilot and crew fatigue by reducing the length of the duty day or increasing the number of days off in the normal duty day cycle. During extended periods of high flight activity, fatigue must be mitigated by fire and aviation managers.

Aviation stand downs and interim flight and duty day limitations can be implemented at the Geographic Area or National level. In either case, the procedure for implementation is the same. Requests for implementation of flight and duty limitations, or proposed stand down parameters, will be made through the National Aviation Office through which it originated.

Decisions and procedures for implementation will be made on a coordinated, interagency basis, involving the GACC, NICC, and National Aviation Representatives at NIFC and Aviation Contracting Officers. Details of the proposal will be formalized and coordinated with other affected agencies and implemented through the National Multi-Agency Coordinating Group (NMAC).

Interim Flight and Duty Limitations Implementation

During extended periods of a high level of flight activity or maximum 14-hour days, fatigue factors must be taken into consideration by Fire and Aviation Managers. Phase 2 and/or Phase 3 Duty Limitations will be implemented for specific geographic area's aviation resources. The minimum scope of operation should be by geographic area; e.g., Northwest, Great Basin.

Phase 1 – Standard Flight and Duty Limitations (Abbreviated Summary)

- 14-hour maximum duty day;
- 8 hours maximum daily flight time for mission flights;
- 10 hours for point-to-point, with a 2 pilot crew;
- Maximum cumulative flight hours of 36 hours, up to 42 hours in 6 days; and
- Minimum of 10 hours uninterrupted time off (rest) between duty periods.

This does not diminish the authority or obligation of any individual COR (Contracting Officer Representative) or Aviation Manager to impose shorter duty days or additional days off at any time for any flight/maintenance crew members for fatigue. This authority is currently provided for in agency direction and contract specifications. Aviation managers should consider the following actions:

- Any tactical aircraft flight crew member (airtanker, helicopter, ASM/lead plane, SEAT or air attack) may request an additional day off in conjunction with their normally scheduled day(s) off.
- The additional day off may be granted when requested. Flight crews are encouraged to honestly assess their fatigue level and request an additional day off if they believe it is needed.
- Aircraft availability will be paid when this occurs regardless of whether a relief crew is provided or not.

- When an additional day off is granted, document this in the remarks section of the aircraft payment document.
- In order to assure sufficient coverage, additional days off will need to be coordinated within the currently assigned GACC and communicated to national aviation managers. Coordinate with your aviation managers, contracting officers and dispatch organizations to implement these actions.

Phase 2 – Interim Duty Limitations

When Phase 2 is activated, pilots shall adhere to the flight and day-off limitations prescribed in Phase 1 and the duty limitations defined under Phase 2.

Each flight crew member shall be given an additional day off each 14-day period. Crews on a 12-and-2 schedule shall have 3 consecutive days off (11-and-3). Flight crews on 6-and-1 schedules shall work an alternating weekly schedule of 5 days on, 2 days off, then 6 days on and one day off.

Aircraft fixed daily rates and special rates, when applicable, shall continue to accrue during the extra day off. Contractors may provide additional approved crews to maximize utilization of their aircraft. All costs associated with providing the additional crew will be at the contractor's expense, unless the additional crew is requested by the Government.

Phase 3 – Interim Duty Limitations

When Phase 3 is activated, pilots shall adhere to the flight limitations of Phase 1 (standard), the additional day off of Phase 2, and the limitations defined under Phase 3.

Flight crew members shall have a minimum of 12 consecutive hours of uninterrupted rest (off duty) during each duty day cycle. The standard duty day shall be no longer than 12 hours, except a crew duty day extension shall not exceed a cumulative 14-hour duty day. The next flight crew rest period shall then be adjusted to equal the extended duty day; i.e., 13- hour duty day, 13 hours rest; 14- hour duty day, 14 hours rest. Extended duty day applies only to completion of a mission. In no case may standby be extended beyond the 12-hour duty day.

Double crews (2 complete flight crews assigned to an aircraft), augmented flight crews (an additional pilot-in-command assigned to an aircraft), and aircraft crews that work a rotating schedule; i.e., 2 days on, 1 day off, 7 days on, 7 days off, or 12 days on, 12 days off, may be exempted from Phase 2 Limitations upon verification that their scheduling and duty cycles meet or exceed the provisions of Paragraph a. of Phase 2 and Phase 1 Limitations.

Exemptions of Phase 3 provisions may be requested through the local Aviation Manager or COR, but must be approved by the FS RAO or DOI Area Aviation Manager.

Aviation Assets

Typical agency aviation assets include: Helitack or Rappel, Aerial Supervision (ATGS, Lead, and ASM), Large (multi-engine) Airtankers, Very Large Airtankers (VLATs), Single Engine Airtankers (SEATs), and Smokejumpers.

- ***BLM*** *– All BLM acquired aircraft (exclusive use, On-Call, and CWN) are available to move to areas of greatest Bureau need, thereby maximizing efficiency and effectiveness. Specific authorities and responsibilities for Field/State and National Offices are outlined earlier in this chapter. Offices are expected to adhere to procedures established in the National Aviation Plan for both acquisition and use reporting.*
- ***FS*** *– All FS aircraft (agency-owned, exclusive use, leased and CWN) are available to move to areas of greatest agency need, thereby maximizing efficiency and effectiveness. Forest Service units are expected to adhere to procedures established in policy for acquisition and use reporting.*

Helitack

Helitack crews perform suppression and support operations to accomplish fire and resource management objectives.

Organization – Crew Size

- ***BLM –*** *The standard BLM exclusive-use helitack crew size for a Type 3 helicopter is a minimum of seven personnel (supervisor, assistant, squad boss, and four crew members). The standard BLM exclusive–use helitack crew size for a Type 2 helicopter is a minimum of ten personnel (supervisor, assistant, squad boss, and seven crewmembers). BLM helicopters operated in Alaska need only be staffed with a qualified Helicopter Manager (HMGB).*
- ***NPS*** *– Helicopter exclusive-use modules will consist of a minimum of eight fire funded personnel. The NPS regions may establish larger crew size and standards for their exclusive use helicopter crews based on the need for an all hazard component (Fire, SAR, Law Enforcement, and EMT). Exception to minimum helicopter crew staffing standards must be approved by the National Aviation Office. NPS helicopters operated in Alaska need only be staffed with a qualified Helicopter Manager (HMGB).*
- ***FS*** *– Regions may establish minimum crew size and standards for their exclusive use helitack crews. Experience requirements for exclusive-use helicopter positions are listed in FAQG, Chapter 4.*

Operational Procedures
The *Interagency Helicopter Operations Guide* (IHOG) NFES 1885 is policy for helicopter operations.

Communication
The helitack crew standard is one handheld programmable multi-channel FM radio per every two crew persons, and one multi-channel VHF-AM programmable radio in the primary helitack crew (chase) truck. Each helitack crew (chase) vehicle will have a programmable VHF-FM mobile radio. Each permanent helibase will have a permanent programmable FM radio base station and should be provided a VHF-AM base station radio.

Transportation
Dedicated vehicles with adequate storage and security will be provided for helitack crews. The required Gross Vehicle Weight (GVW) of the vehicle will be dependent upon the volume of equipment carried on the truck and the number of helitack crewmembers assigned to the crew.

- ***BLM*** *– Minimum vehicle configuration for a seven person crew will consist of one Class 661 Helitack Support Vehicle and one Class 156 or Class 166 vehicle.*

Training and Experience Requirements
All helitack members will meet fire qualifications as prescribed by the National Wildfire Coordinating Group (NWCG) 310-1 and their agency manual requirements. The following chart establishes experience and training requirements for FS, BLM, NPS, and FWS Exclusive Use, Fire Helicopter Crew Positions.

Non-Exclusive Use HECM's and HMGB's should also meet the following currency requirements.

Note: the Interagency Aviation Training Guide (February 2014) states additional aviation training requirements (A courses). The Guide is available at http://www.iat.gov/docs/IAT_Guide_2014_0331.pdf.

Exclusive Use Fire Helicopter Position Prerequisites

Position[1]	Minimum Prequisite Experience[2]	Minimum Required Training[3]	Currency Requirements
Fire Helicopter Crew Supervisor	One season[4] as an Assistant Fire Helicopter Crew Supervisor, ICT4, HMGB, HEB2		RT-372[5] RT-130
Assistant Fire Helicopter Crew Supervisor	One season as a Fire Helicopter Squad Boss, ICT4, HMGB, HEB2(T)	I-200, S-215, S-219, S-260, S-270	RT-372[5] RT-130
Fire Helicopter Squad Boss	One season as a Fire Helicopter Crewmember, FFT1, ICT5	S-211, S-212	RT-130
Fire Helicopter Crewmember	One season as a FFT2, HECM Taskbook	S-271	RT-130

[1] All Exclusive use Fire Helicopter positions require an arduous fitness rating.
[2] Minimum experience and qualifications required prior to performing in the Exclusive use position. Each level must have met the experience and qualification requirements of the previous level(s).
[3] Minimum training required to perform in the position. Each level must have met the training requirements of the previous level(s).
[4] A "season" is continuous employment in a primary wildland fire position for a period of 90 days or more.
[5] After completing S-372, must attend Interagency Helicopter Manager Workshop (RT-372) within three years and every three years thereafter.

Note: Exceptions to the above position standards and staffing levels may be granted on a case-by-case basis by the BLM National Aviation Office, NPS Regional Office, FWS Regional Office, or FS Regional Office as appropriate.

- Some positions may be designated as COR/Alternate-COR. If so, see individual Agency COR training and currency requirements.
- Fire Helicopter Managers (HMGB) are fully qualified to perform all the duties associated with Resource Helicopter Manager.

Helicopter Rappel and Cargo Let-Down

Any rappel or cargo let-down programs must be approved by the appropriate agency national headquarters.

- ***BLM*** *– BLM personnel involved in an Interagency Rappel Program must have SFMO approval.*
- ***NPS*** *– Approval is required by the National Office.*
- ***FS*** *– Approval is required by the National Office.*

All rappel and cargo let-down operations will follow the I*nteragency Helicopter Rappel Guide* (IHRG), as policy. Any exemption to the guide must be requested by the program through the state/region for approval by the National Aviation Office (BLM), or Director of Fire and Aviation (FS).

Emergency Medical Short-haul

The emergency medical short-haul mission is intended to extract injured or ill personnel from areas where a ground based evacuation would expose rescuers to greater risk or where such evacuation would likely cause greater harm or threaten the life or limbs of the patient due to added exposure or time delay. The short-haul transport of personnel or patients should occur over the shortest reasonable distance to a location where another type of medical transportation is available (e.g., ground ambulance, EMS/life flight, or internal in an agency helicopter).

All emergency medical short-haul programs must be approved by the appropriate agency national headquarters.

- ***NPS/FS*** *– National Office approval is required.*

All short-haul operations will comply with the following policy:

- ***NPS*** *– Helicopter Short-haul Handbook.*
- ***FS*** *– Emergency Medical Short-Haul Operations Plan (EMSHOP).*

Exemptions to the policy must be requested by the program through the regional office for approval by the National Aviation Office (NPS) or Director of Fire and Aviation (FS).

Aerial Ignition

The *Interagency Aerial Ignition Guide* (IAIG) is policy for all aerial ignition activities.

Fire Chemical Avoidance Areas

See Chapter 12 (Suppression Chemicals and Delivery Systems) for guidance.

Aerial Supervision Principles for ATGS, ASM, and Lead

The response speed of aerial supervision resources contributes greatly to established aggressive initial attack doctrine and should be utilized accordingly.

Aerial supervision resources will be dispatched when available to initial/extended attack incidents in order to enhance safety, effectiveness, and efficiency of aerial/ground operations.

When aerial supervision resources are collocated with airtankers, they should be launched together to maximize the safety, effectiveness, and efficiency of incident operations.

Incidents with three or more aircraft over/assigned to them should also have aerial supervision in the form of ATGS or ASM. A qualified smokejumper spotter (senior smokejumper in charge of smokejumper missions) may coordinate airspace over a fire until a qualified ATGS arrives.

Operational Procedures and Policy

The *Interagency Aerial Supervision Guide* (IASG, PMS 505) provides operational procedures for all aerial supervision resources. The IASG and additional aerial supervision forms are maintained online at the NWCG website http://www.nwcg.gov/publications/505.

The *NIMS Wildland Fire Qualification System Guide* (PMS 310-1) provides training, qualification, and currency standards.

- ***FS –*** *Forest Service aerial supervision training, qualifications, and currency standards are contained in the Fire and Aviation Qualifications Guide (FAQG).*

The IASG contains additional requirements and is policy for the BLM, BIA, FWS, and NPS.

Air Tactical Group Supervisor (ATGS)

The ATGS coordinates incident airspace and manages incident air traffic. The ATGS is an airborne firefighter who coordinates, assigns, and evaluates the use of aerial resources in support of incident objectives. Specific duties and responsibilities are outlined in the *Wildland Fire Incident Management Field Guide* (PMS 210) and the *Interagency Aerial Supervision Guide* (NFES 2544).

Program Management

The air attack program is managed at the national level by agency program managers. The National Interagency Aviation Committee (NIAC) provides guidance through the Interagency Aerial Supervision Subcommittee (IASS), which authorizes an ATGS Cadre to provide operational and programmatic oversight at the Geographic Area level.

Training

Classroom training is completed as per the PMS 310-1.

Field (flight) training assignments are coordinated and prioritized by the Geographic Area Training Representatives and ATGS Cadre, and is implemented based on a national interagency trainee priority list.

National interagency ATGS training aircraft have been identified and are utilized for the sole purpose of ATGS flight training.

Operational Considerations

- Ground resources will maintain consistent communication on assigned air to ground frequencies with aerial supervision to maximize the safety, effectiveness, and efficiency of aerial operations.
- Relief aerial supervision should be ordered for sustained operations to ensure continuous coverage over an incident.
- Personnel who are performing aerial reconnaissance and detection will not perform aerial supervision duties unless they are fully qualified as an ATGS.
- ATGS aircraft must meet the aircraft/avionics typing requirements listed in the IASG and the pilot must be carded to perform the air tactical mission. Rotor-wing pilots are not required to be carded for air tactical missions.

Leadplane

A leadplane is a national shared resource.

Agency policy requires an ASM or Lead/ATCO to be on order prior to aerial retardant/suppressant delivery over a congested area. Operations may proceed before the ASM or Lead/ATCO arrives if communications are established with on-site resources, authorization is granted from the IC, and the line is cleared prior to commencing aerial application operations.

Aerial Supervision Module (ASM)

The ASM is a national shared resource.

The ASM is crewed with both a Lead/ATCO qualified Air Tactical Pilot (ATP) and an Air Tactical Supervisor (ATS). These individuals are specifically trained to operate together as a team. The resource is primarily designed for providing both functions (Lead/ATCO and ATGS) simultaneously from the same aircraft, but can also provide single role service.

The ATP is primarily responsible for aircraft coordination over the incident. The ATS develops strategy and implements tactical plans through coordination with the IC or designee.

Operational Considerations

Any operation that limits the national resource availability must be approved by the agency program manager.

Aerial or incident complexity and environmental considerations will dictate when the ASM ceases low-level operations. The ASM flight crew has the responsibility to determine when the complexity level of the incident exceeds

the capability to perform both ATGS and leadplane functions from one aircraft. The crew will request additional supervision resources, or modify the operation to maintain mission safety and efficiency.

Policy
Only those individuals certified and authorized by the BLM–National Aviation Office or the FS–Branch Chief Pilot Standardization will function as an Air Tactical Supervisor (ATS) in an ASM mission profile.

Aerial Supervision Module Program Training and Qualifications
Training and qualification requirements for ASM crewmembers are defined in the IASG.

Reconnaissance or Patrol Flights

The purpose of aerial reconnaissance or detection flights is to locate and relay fire information to fire management. In addition to detecting, mapping, and sizing up new fires, this resource may be utilized to provide ground resources with intelligence on fire behavior, provide recommendations to the IC when appropriate, and describe access routes into and out of fire areas for responding units. Only qualified Aerial Supervisors (ATGS, ASM, HLCO and Lead/ATCO) are authorized to coordinate incident airspace operations and give direction to aviation assets. Flights with a "Recon, Detection, or Patrol" designation should communicate with tactical aircraft only to announce location, altitude and to relay their departure direction and altitude from the incident.

Airtankers

Federally contracted airtankers are national resources. Geographic areas administering these aircraft will make them available for initial attack and extended attack fires on a priority basis. The GACC will ensure that all support functions (e.g. dispatch centers and tanker bases) are adequately staffed and maintained to support the mobilization of aircraft during normal and extended hours.

For aviation safety and policy concerning wildland fire chemicals see Chapter 12 (Suppression Chemicals and Delivery Systems).

Airtankers are owned and operated by commercial vendors or owned by the Forest Service and operated by contractors. The management of airtankers is governed by:

- ***BLM –*** *The requirements of the DM, BLM NAP, and BLM Manual 9400.*
- ***FS*** *– Airtankers operate in accordance with 14 CFR Part 137, specific contracts, Grants of Exemption and operations plans.*

Airtanker Types

Airtankers are typed according to their load capacity:

- Very Large Air Tankers (VLAT) – 8,000 gallons or more
- Type 1 – 3,000 to 7,999 gallons
- Type 2 – 1,800 to 2,999 gallons
- Type 3 – 800 to 1,799 gallons
- Type 4 – up to 799 gallons

Airtanker Rotation

The national airtanker fleet includes a mix of Exclusive Use (EU), Call When Needed (CWN)/On-Call Type 1 and Type 2 airtankers (Large Airtankers or LATs), Very Large Airtankers (VLATs), Single Engine Airtankers (SEATs) and Forest Service owned airtankers. To ensure consistent utilization, rotation, and management of the national airtanker fleet, the following is interagency direction for the management of airtanker rotation and supplements direction contained in *Interagency Airtanker Base Operations Guide* (PMS 508) and in *Interagency SEAT Operations Guide* (PMS 506).

All LATs, VLATs and SEATs operating from the same base shall be dispatched in rotation based on the type of airtanker requested on a first in/first out basis regardless of contract type (EU, CWN/On-Call or Forest Service owned) or the location of the incident.

First in/first out also applies to airtankers that are requested for a load/return. When an incident requires multiple loads of retardant, Aerial Supervisors/Incident Commanders will notify the appropriate dispatch center of the need for additional retardant and any operational retardant delivery requirements. To ensure timely and effective retardant delivery, dispatch will order the next available airtanker in rotation if an airtanker that meets the requirement of the request is available and located at the load and return airtanker base.

Exceptions

1. A Leadplane or Aerial Supervision Module (ASM) is not available and the airtanker crew is not approved for independent IA response.
2. Incident commanders/aerial supervision requests a specific type of resource (e.g., VLAT, LAT, or SEAT).
3. On-scene aerial supervision determines that the use of a specific make/model airtanker is not effective based on factors such as risk, maneuverability in terrain, and/or effectiveness.
4. The next airtanker in rotation has an operating restriction at the base where it is being assigned. Operating restrictions may include fuel and retardant availability, airtanker base or airport restrictions, significant downloading based on performance, or distance to the incident is not considered effective.

5. Repositioning of an airtanker closer to where their maintenance crews or supplies are available. The National Interagency Coordination Center (NICC) will facilitate in coordination with the Geographic Area Coordination Center (GACC).
6. A benefit to the government would be realized by changing the rotation. This will be facilitated by the GACC or NICC with consideration to days off, mission requirements, and/or anticipated need.
7. Airtankers are returning after day(s) off. Upon returning to availability from days off, these airtankers will be at the end of the rotation at the airtanker base. Airtankers that work a seven day schedule retain their position in the rotation.
8. MAFFS and Canadian airtankers supplementing the commercial airtanker fleet will begin rotation at that base after the contracted and FS owned airtanker(s) at the beginning of each day.
9. Water Scoopers will not be included in airtanker base rotations.

Rotation of State Airtankers

Rotation of State resources on State incidents at a state airtanker base is established by their agency.

In cases where State resources are operated in conjunction with federally contracted airtankers on an incident primarily on federal lands, the State airtankers are added to the rotation after the federal airtankers at the beginning of each day.

Additional Information

Forest Service/DOI contracted airtankers, when assigned to incidents managed by other agencies or state cooperators remain under the direction of the Contracting Agency. Forest Service and DOI Contracted airtankers are bound only by their contract and will be treated fairly and equitability during their assignment with other federal or state agencies.

Canadian Airtankers

Canadian registered CV-580 airtankers under contract to the State of Alaska can be mobilized to the lower 48 as approved cooperator aircraft. These airtankers have been carded by OAS under 351 DM 4, OPM-53, and FSH 5712.43 as Initial Attack (IA) resources. Operationally they can be used similar to other federally contracted airtankers and can be directed by U.S. ASM/Leadplanes or Canadian Bird Dogs.

Additional Canadian airtankers can be activated through the NIFC/CIFFC agreement. These Canadian airtankers are operated as a “group” with Canadian Bird Dogs as part of their operational model. Bird Dogs have a Canadian Air Attack Officer (AAO) on board and function similar to a U.S. ASM/Leadplane.

The standard operating procedure for the Canadian Airtanker Groups is as follows:

- Canadian airtankers must be supervised by a Bird Dog or U.S. ASM/Leadplane, and must include at a minimum a low level "show me" pass.
- Canadian Bird Dogs may provide low level target identification runs ("show me" pass) for either Canadian or US contracted airtankers.
- Canadian Bird Dogs can perform the functions of an ATGS.
- Canadian Bird Dogs are not authorized to "lead" Forest Service contracted airtankers.
- U.S. ASM/Leadplanes are authorized to "lead" Canadian airtankers.

Airtanker Base Operations

Certain parameters for the operation of airtankers are agency-specific. For dispatch procedures, limitations, and times, refer to geographic area mobilization guides and the Interagency Airtanker Base Operations Guide (IABOG).

Loading Operations

Forest Service contracted airtankers, owned airtankers and Modular Airborne Firefighting System (MAFFS) airtankers shall be loaded with retardant or water measured in pounds by a Mass Flow Meter. Refer to FSH 5709.16, Chapter 30 for more information.

Airtanker Base Personnel

There is identified training for the positions at airtanker bases; the Interagency Airtanker Base Operations Guide (IABOG) contains a chart of required training for each position. It is critical that reload bases are prepared and staffed during periods of moderate or high fire activity at the base. All personnel conducting airtanker base operations should review the IABOG and have it available.

Startup/Cutoff Time for Multi Engine Airtankers

Refer to the *Interagency Aerial Supervision Guide* (NFES 2544).

Single Engine Airtankers

Single Engine Airtanker (SEAT) Operations, Procedures, and Safety

The *Interagency SEAT Operating Guide* (ISOG, NFES 1844) defines operating standards and is policy for both the DOI and FS.

Single Engine Airtanker Manager Position

The SEAT Manager (SEMG) duties and responsibilities are outlined in the ISOG. SEMGs ensure adherence to contract regulations, safety requirements, and fiscal accountability.

Operational Procedures

Using SEATs in conjunction with other aircraft over an incident is standard practice. Agency or geographical area mobilization guides may specify additional procedures and limitations.

Depending on location, operator, and availability, SEATs are capable of dropping suppressants, water, or approved chemical retardants. Because of the load capacities of the SEATs (500 to 800 gallons), quick turn-around times should be a prime consideration.

SEAT operations at established airtanker bases or reload bases are authorized. All BLM and FS Airtanker base operating plans will permit SEAT loading in conjunction with large airtankers.

Smokejumper Pilots

The *Interagency Smokejumper Pilot Operations Guide* (ISPOG) serves as policy for smokejumper pilot qualifications, training, and operations.

Military or National Guard Helicopters and Pilots

The *Military Use Handbook* (NFES 2175) will be used when planning or conducting aviation operations involving regular military aircraft. Ordering military resources is done through the National Interagency Coordination Center (NICC); National Guard resources are utilized through local or state Memorandum of Understanding (MOU).

Modular Airborne Fire Fighting System (MAFFS)

The *MAFFS Operating Plan* (available from the National Interagency Coordination Center) will be used when planning or conducting aviation operations involving MAFFS military aircraft. Ordering MAFFS is done through the National Interagency Coordination Center (NICC); MAFFS are utilized through a national agreement (see the *National Interagency Mobilization Guide*). Several states have the ability to activate MAFFS through separate agreements that do not require ordering through NICC.

Cooperator Aircraft

Aircraft procured/owned by cooperating agencies (state, local, and International) may be utilized on federally managed fires when federal cooperative agreements are in place that approve those aircraft and pilots for the intended missions.

The purpose of this direction is to keep non-federally approved aircraft under the operational control of the agency providing the aircraft, to the extent possible.

States may use aircraft that have not been identified as an "Approved Cooperator Aircraft" on federal lands when and where the state is the protecting agency in a reciprocal or off-set agreement or when state lands are threatened and the state maintains operational control of the aircraft.

The following conditions apply for non-federally approved aircraft:

- No federal employees are allowed to ride on board the aircraft.
- No federal employee may be assigned to a position that exercises contractual control.
- They are approved to have federal personnel load retardant at federal airtanker bases, regardless of jurisdiction.
- Federal personnel may provide aerial supervision (ATGS, ASM, HELCO, Leadplane) under existing standard procedures and agreements.
- They remain under state operational control regardless of the agency affiliation of the firefighters directing the aircraft on an incident with state jurisdiction.
- They are approved to interact with federal dispatch personnel as long as the aircraft remains under the operational control of the state or for safety reasons.

Under emergency circumstances, where **human life is immediately at risk** by wildland fire on federal lands under federal protection, a federal line officer can approve the use of non-federally approved aircraft to address the immediate threat. This exemption must only take place when sufficient federal firefighting aircraft are not readily available to meet the emergency need. Line officers are encouraged to consult with their agency aviation management personnel to aid in decision-making.

As exemptions are exercised, they must be documented by the approving federal line officer in accordance with their agencies guidance to include submitting a SAFECOM within 24 hours.

- ***FS*** *– Non-federally approved aircraft shall not be used on National Forest System (NFS) lands, when the Forest Service has operational control, unless human life is immediately at risk. Non-federally approved aircraft shall not be used when the Forest Service is the protecting agency in a reciprocal or off-set agreement. State cooperators may use non-federally approved aircraft on NFS lands only when state lands are threatened, as long as the state is in operational control of the aircraft. When in unified command, non-federally approved aircraft shall not be used on federal lands unless state lands are threatened, as long as the state is in operational control of the aircraft. Refer to Forest Service Regional official letters regarding use of non-federally approved aircraft and region-specific notification, approval and reporting processes and FSM 5709.16 Chapter 30.*